

REMARKS

The Applicants thank the Examiner for the thorough consideration given the present application. Claims 4-6 and 8 are cancelled herein without prejudice to or disclaimer of the subject matter contained therein. Claims 2 and 3 were previously cancelled. Claims 1, 7, and 9 - 13 are pending. Claims 1, 7, and 9 are amended, and claims 10 -13 are added. Claims 1 and 7 are independent. The Examiner is respectfully requested to reconsider the rejections in view of the amendments and remarks set forth herein.

Examiner Interview

If, during further examination of the present application, any further discussion with the Applicants' Representative would advance the prosecution of the present application, the Examiner is encouraged to contact Carl T. Thomsen, at 1-703-208-4030 (direct line) at his convenience.

Drawings

It is gratefully appreciated that the Examiner has accepted the drawings.

Claim for Priority

The Examiner has acknowledged the Applicants' claim for foreign priority based on Japanese Patent Application No. 2003-11070 filed on January 20, 2003.

Information Disclosure Citation

The Applicants thank the Examiner for considering the reference supplied with the Information Disclosure Statement filed December 18, 2008, and for providing the Applicants with an initialed copy of the PTO/SB/08 form filed therewith.

Rejections Under 35 U.S.C. §102(b) and 103(a)

Claims 1 and 4-9 stand rejected under 35 U.S.C. §102(b) as being anticipated by Arishiro (U.S. 2001/0008061) in view of Mori (U.S. 5,191,218).

This rejection is respectfully traversed.

Arguments Regarding Independent Claims 1 and 7 as Amended

While not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the present application, each of independent claims 1 and 7 has been amended to include *inter alia*

(a) The adjustment part jets out the compressed air based on the signal from the negative pressure sensor when the vacuum level rises above a maximum level, and stops the compressed air when the vacuum level falls below a minimum level, the maximum level being determined by an increased work load rate, and the minimum level being determined by a decreased work load rate,

(b) Each work receiving opening is connected to the vacuum suction channel, through a minute sectional suction channel provided on the conveyor table, the sectional area of the minute sectional channel being smaller than that of the vacuum suction channel.

Advantages of the Present Invention

The advantages obtained by the above features (a) (b) are as follows:

Due to the above features (a) (b), when the work load rate is increased, for example, almost all of the work receiving openings receive works, the vacuum level rises above the maximum level which is determined by the increased work load rate. In this case, the adjustment part jets out the compressed air based on the signal from the negative pressure sensor.

On the other hand, when the work load rate is decreased, for example, only one or two work receiving openings receive works, the vacuum level falls below a minimum level which is determined by the decreased work load rate. In this case, the adjustment part stops the compressed air based on the signal from the negative pressure sensor.

In this manner, according to the present invention, the vacuum level of the work receiving openings can be securely stable by the operation of the adjustment part regardless of the work load rate of the work receiving openings, or the increased work load rate or the decreased work load rate.

In addition, since each work receiving opening is connected to the vacuum suction channel through a minute sectional suction channel provided on the conveyor table, the section area of the minutes sectional suction channel being smaller than that of the vacuum suction channel, even when the work load rate is decreased, for example, only one or two work receiving openings receive works, the vacuum level of the work receiving openings can be retained at a certain level where the works can be sucked in the work receiving openings.

This is to say, the section area of the minutes sectional suction channel is smaller than that of the vacuum suction channel and therefore the minute sectional suction channel can serve as a pressure resistance when the vacuum generation mechanism is operated. Thus, the vacuum level of the work receiving openings can be retained at a certain level where the works can be sucked in the work receiving openings as stated above.

We believe that no combination of Arishiro and Mori discloses the features (a) and (b) above.

Regarding Arishiro Reference

The Arishiro document merely, discloses an index table including a plurality of holding recesses 12, and vacuum source 35 connected to the holding recesses 12. However, Arishiro does not disclose that a negative pressure sensor is provided for detecting the vacuum level of the work receiving opening of the conveyer table, nor that the adjustment part is provided for adjusting the vacuum level of the work receiving opening of the conveyor table based on a signal from the negative pressure sensor.

In addition, although reference numeral 37 of Arishiro document may be a control valve, Arishiro document is silent as to whether reference numeral 37 represents a negative pressure sensor.

Although the Examiner has pointed out that Arishiro discloses a minute sectional suction channel located between the vacuum suction channel and the work receiving openings, his allegation is not correct.

That is to say, Arishiro does not disclose that the section area of the minute sectional suction channel is smaller than that of the vacuum suction channel and therefore the minute section channel can serve as a pressure resistance when the vacuum generation mechanism is operated, or that the vacuum level of the work receiving openings can be retained at a certain level where the works can be sucked in the work receiving openings.

Regarding the Mori Reference

Although the Mori document discloses a vacuum chuck, the vacuum chucks of the Mori document are for chucking wafers.

This is to say, Mori fails to teach that the vacuum leak generation part includes a table base with a vacuum suction channel, and a conveyor table rotatably mounted on the table base, having a work opening for receiving a work, the work receiving opening being connected to the vacuum suction channel.

In addition, the Examiner has pointed out that Mori discloses an adjustment part (115b).

Mori does not teach that when the work load rate is increased, for example, almost all of the work receiving openings receive works, the vacuum level rises above the maximum level which is determined by the increased work load rate, nor that in this case, the adjustment part jets out the compressed air based on the signal from the negative pressure sensor.

In addition, Mori does not teach that when the work load level is decreased, for example, only one or two work receiving opening receive works, the vacuum level falls below a minimum level which is determined by the decreased work load level, or that in this case, the adjustment part stops the compressed air based on the signal from the negative pressure sensor.

That is to say, Mori does not teach at all that the vacuum level of the work receiving openings can be securely stabilized by the operation of the adjustment part, regardless of the work load rate of the work receiving openings, or the increased work load rate or the decreased work load rate.

Furthermore, Mori discloses a vacuum chuck for chucking wafers, and therefore Mori has nothing to do with the characteristic features (a) (b) of the present invention, or any work load rate of the work receiving openings.

At least for the reasons explained above, the Applicants respectfully submit that the combination of elements as set forth in each of independent claims 1 and 7 is not disclosed or made obvious by the prior art of record, including Arishiro (U.S. 2001/0008061) and Mori (U.S. 5,191,218).

Therefore, independent claims 1 and 7 are in condition for allowance.

Dependent Claims

The Examiner will note that dependent claims 4-6 and 8 have been cancelled, and dependent claims 10-13 have been added.

All dependent claims are in condition for allowance due to their dependency from allowable independent claims, or due to the additional novel features set forth therein.

All pending claims are now in condition for allowance.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are respectfully requested.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject claims, but merely to show the state of the art, no comment need be made with respect thereto.

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.


If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 208-4030(direct line).

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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